REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion is respectfully requested.

Claims 11-22 are currently pending in the application; Claims 1-10 are canceled without prejudice or disclaimer. Claims 11-22 are newly added by the present amendment. Support for new Claims 11-22 can be found in the original specification, claims and drawings.[1] Thus, no new matter is presented.

By way of the summary, the Official Action presents the following issues: Claims 1, 6 and 10 were rejected under 35 U.S.C. § 102(b) as being anticipated by Baker et al. (U.S. Patent No. 5,555,914, hereinafter "Baker"); and Claims 2-5 and 7-9 were rejected under 35 U.S.C. § 103(a) as unpatentable over Baker in view of Newton et al. (U.S. Patent No. 6,437,981, hereinafter "Newton").

The outstanding Office Action asserts that Baker teaches all the elements of the claimed invention. Applicants respectfully traverse this rejection.

By way of background, conventional capillary pumped loop (CPL) heat dissipation devices cycle fluids through a plurality of phases in order to dissipate heat generated by an electronic component, or the like. The CPL structure operates by evaporating a liquid in an evaporator located in an area where excess heat is to be dissipated. The vapor created in the evaporator then flows to a condenser where the vapor is condensed; this condensed fluid is then returned to the evaporator to absorb heat and again be evaporated. This process is repeated continuously. However, when CPL structures are implemented using bonded silicon and glass substrates, the repeated condensation and evaporation causes the areas where the wick, lines and condenser are formed to discolor and generate harmful gas. This gas results

[1] Specification at Fig. 1, 2 and 5, and corresponding description in the present specification.

in an increase in gas pressure which may damage the device and/or interfere with heat transport characteristics of the device.[2]

With at best the above deficiency in mind, the present invention relates to a method and apparatus for preventing gas generation in a heat-transport mechanism. More specifically, Claim 1 relates to a heat dissipation device including a refrigerant and an evaporator and condenser formed between a glass and a substrate. A liquid passage is connected between the evaporator and condenser, and a gas passage is connected between the evaporator and condenser. A wick is included in one of the evaporator, the condenser, the liquid passage, or the gas passage, and the glass and/or the substrate is covered with a stable material.

New Claim 11 recites, *inter alia*, a heat-transport device comprising:

> "...a wick being included in one of the evaporator, the condenser, the liquid passage, or the gas passage, wherein the glass and/or the substrate is covered with a stable material."

Baker describes a heat pipe (40) which includes a microparticle enhanced fibrous ceramic (MEFC) inner wick (41) with a central vapor channel (42) and a ring of arteries (43).[3] The wick (41) is enclosed by reinforced ceramic laminate (44) and the laminate (44) is coated by Pyrex or other shock-resistant glass coating (45) causing the heat pipe to be gas tight.[4] Figure 6 of Baker illustrates the heat pipe (40) and corresponding components, as discussed above.

Claim 11 recites heat-transport device wherein the glass and/or the substrate is covered with a stable material. Baker describes only that the laminate (44) is coated by Pyrex or other shock resisting glass coating (45) to make the heat pipe gas tight.[5] Baker fails to

[2] Specification at page 2, line 12 – page 3, line 2.
[3] Baker at Figure 6 and column 6, lines 23-25.
[4] Baker at column 6, lines 25-31.
[5] Baker at column 6, lines 30-31.

describe that the wick or the line are subjected to a coating treatment of stable material.[6] Therefore, Baker discloses that the only "coating" used is a glass substrate, and Baker fails to disclose or suggest that the glass, or any other substrate, is coated with a stable material, as recited in Claim 11.

Further, Baker fails to disclose or suggest an evaporator and a condenser formed between a glass and a substrate and corresponding passages connected between the glass and the substrate to allow for the flow of a refrigerant between the condenser and evaporator, as recited in Claim 11. Instead, Baker describes that cryogenic fluid or material may be used to cool surfaces by placing a MEFC surface in contact with cryogenic fluid.[7] Baker further describes that vapor may evaporate through a MFEC Dewar into the air, but at no point is this evaporated fluid condensed in a condenser.[8] Therefore, Baker fails to teach or suggest that his device includes a condenser, evaporator and a passage between the two, as recited in Claim 11.

Accordingly, Applicants respectfully that Claim 11 patentably defines over Baker. For substantially the same reasons as given with respect to new Claim 11, it is also submitted that Claim 17 also patentably defines over Baker.

As discussed above, Baker fails to disclose or suggest the Applicants' structure, and method of coating the glass and/or the substrate with a stable material. Likewise, Newton fails to remedy these deficiencies, and therefore, none of the cited references, either alone or in combination teach or suggest Applicants' Claims 11-22 which include the above distinguished limitation by virtue of dependency or independent recitation. Therefore, the Official Action does not provide a *prima facie* case of obviousness with regard to any of these claims.

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[6] Baker at column 6, lines 32-35.
[7] Baker at column 6, lines 1-13 and Figures 2-3.
[8] Id.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted the invention defined by Claims 11-22 is patentably distinguishing over the prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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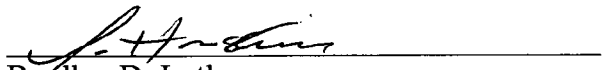

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